

Claims

Cancel Claims 1-20

21. (New) A method for coordinating a first level route directed workflow and a second level route directed workflow using an object step, the method comprising:
defining a first object step encapsulating a first route segment, a sequence of steps to be connected to other route segments;
defining a first level workflow means, including an Enterprise Resource Planning (ERP) system, directed by an object route, a sequence of object steps;
defining a second level workflow means, including a shopfloor system, directed by a route, a sequence of steps;
defining a first object route, a sequence of object steps, including the first object step;
forming a first route from the first object route by connecting the route segments encapsulated in each object step, including the first route segment, in the sequence of the object steps of the first object route;
providing the first object route to direct the first level workflow means;
providing the first route to direct the second level workflow means;
such that when the first level workflow starts the first object route, the second level workflow starts the first route and when the second level workflow completes the first route, the first level workflow completes the first object route.
22. (New) The method of Claim 21 wherein a second object step encapsulating a second route segment follows the first object step in the sequence of object steps of the first object route and the second route segment provides a feedback connection to the first route segment in forming the first route.
23. (New) The method of Claim 21 wherein the first object step encapsulates a third route segment as an alternative route segment such that either the first route segment or the third route segment is selected when forming the first route.
24. (New) The method of Claim 21 wherein the first route segment can indicate to the first object step when the first route segment begins directing the second level workflow.
25. (New) The method of Claim 21 wherein the first route segment can indicate to the first object step when the first route segment completes directing the second level workflow.

26. (New) The method of Claim 21 wherein the first route segment can report to the first object step the number of identifiers, including barcode and Radio Frequency Identifier (RFID), read by a step in the first route segment.
27. (New) The method of Claim 21 wherein the first route segment can report to the first object step the net number of identifiers, including barcode and Radio Frequency Identifier (RFID), read by a step in the first route segment by subtracting the number of identifiers read on a feedback path from the number of identifiers read.
28. (New) the method of Claim 21 wherein the first route segment can report to the first object step the identifier, including barcode and Radio Frequency Identifier (RFID), read by a step in the first route segment.
29. (New) A method for creating a detailed route to direct a detailed workflow, including a Shopfloor system, from a abstraction route defined to direct an abstraction workflow, including an Enterprise Resource Planning (ERP) system, using an object step, the method comprising:
defining a first object step encapsulating a first route segment, a sequence of steps to be connected to other route segments;
defining a first abstraction route, a sequence of object steps including the first object step, to direct an abstraction workflow to implement the abstraction level of a process;
creating a first detailed route from the first abstraction route by connecting the route segments, including the first route segment, encapsulated in each object step in the sequence of the object steps of the first abstraction route such that
the first detailed route can direct the detailed workflow to implement the detailed level of the process.
30. (New) The method of Claim 29 wherein a second object step encapsulating a second route segment follows the first object step in the sequence of the object steps of the first abstraction route and the second route segment provides a feedback connection to the first route segment in forming the first detailed route.
31. (New) The method of Claim 29 wherein the first object step encapsulates a third route segment as an alternative route segment such that either the first route segment or the third route segment is selected when forming the first detailed route.
32. (New) A system using an object step for coordinating an abstraction level workflow directed by an object route and a detailed level workflow directed by a route, the system comprising:

a first computer system connected to a network, including the Internet, and executing an abstraction level workflow program, including an Enterprise Resource Planning (ERP) system, directed by an object route, a sequence of object steps;

a second computer system connected to the network and executing a detailed level workflow program, including a Shopfloor system, directed by a route, a sequence of steps;

a first object step encapsulating a first route segment, a sequence of steps to be connected to other route segments;

a first object route, a sequence of object steps including the first object step;

a third computer system connected to the network and executing a conversion program to create a route from an object route by connecting the route segments in each object step in the sequence of the object steps in the object route;

the third computer system and conversion program are provided the first object route and the conversion program creates a first route including the first route segment;

the third computer provides the first object route to the first computer such that the abstraction level workflow program is directed by the first object route;

the third computer provides the first route to the second computer such that the detailed level workflow program is directed by the first route; such that

when the first object route begins directing the abstract level workflow, the first route begins directing the detailed level workflow and when the first route completes, the first object route is completed.

33. (New) The method of Claim 32 wherein a second object step encapsulating a second route segment follows the first object step in the sequence of the object steps of the first object route and the second route segment provides a feedback connection to the first route segment.

34. (New) The method of Claim 32 wherein the first object step encapsulates a third route segment as an alternative route segment such that either the first route segment or the third route segment is selected when forming the first route.

35. (New) The method of Claim 32 wherein the first route segment can indicate to the first object step when the first route segment begins directing the detailed level workflow.

36. (New) The method of Claim 32 wherein the first route segment can indicate to the first object step when the first route segment completes directing the detailed level workflow.

37. (New) The method of Claim 32 wherein the first route segment can report to the first object step the number of identifiers, including barcode and Radio Frequency Identifier (RFID), read by a step in the first route segment.
38. (New) The method of Claim 32 wherein the first route segment can report to the first object step the net number of identifiers, including barcode and Radio Frequency Identifier (RFID), read by a step in the first route segment by subtracting the number of identifiers read on a feedback path from the number of identifiers read.
39. (New) the method of Claim 32 wherein the first route segment can report to the first object step the identifier, including barcode and Radio Frequency Identifier (RFID), read by a step in the first route segment.